CLAIMS

1- Use of a precipitated silica, pretreated by at least one organosilane hydrophobing compound or one hydrophobing silicone oil, as a reinforcing filler for silicone elastomer, the said pretreated silica being incorporated in the silicone elastomer by cold mixing, the said pretreated silica having the following characteristics :
a BET specific surface ranging from 50 to 450 m^2/g,
a water wettability lower than 80,
a sulfur content lower than 0.1 % by weight.

2- Use according to claim 1, wherein the said pretreated silica has a BET specific surface ranging from 60 to 250 m^2/g, in particular from 65 to 150 m^2/g.

3- Use according to one of claims 1 and 2, wherein the said pretreated silica presents a water wettability ranging from 10 to 75, in particular from 35 to 75.

4- Use according to one of claims 1 to 3, wherein the said pretreated silica has a sulfur content lower than 0.05 % by weight.

5- Use according to one of claims 1 to 4, wherein the said pretreated silica has a carbon content of at least 1.8 %, preferably ranging from 2 to 5 %, by weight.

6- Use according to one of claims 1 to 5, wherein the said pretreated silica presents a parameter C lower than 80, preferably lower than 50, in particular lower than 30.

7- Use according to one of claims 1 to 6, wherein the said pretreated silica presents a median particle size lower than 30 µm, in particular lower than 25 µm.

8- Use according to one of claims 1 to 7, wherein the difference in water uptake, measured at 20 °C, with a controlled relative humidity of 71 %, between the non-pretreated silica and the pretreated silica is of at least 1.5 %.

9- Use according to one of claims 1 to 8, wherein the difference in water uptake, measured at 20 °C, with a controlled relative humidity of 51 %, between the non-pretreated silica and the pretreated silica is of at least 1.0 %.

10- Use according to one of claims 1 to 9, wherein the non-pretreated silica presents a BET specific surface, S_{BET}, and a CTAB specific surface, S_{CTAB}, such that their difference ($S_{BET} - S_{CTAB}$) is greater than 25 m^2/g, in particular greater than 35 m^2/g.

11- Use according to one of claims 1 to 10, wherein the non-pretreated silica has a BET specific surface ranging from 110 to 300 m^2/g, preferably from 150 to 250 m^2/g, and a CTAB specific surface ranging from 70 to 230 m^2/g, preferably from 110 to 190 m^2/g.

12- Use according to one of claims 1 to 11, wherein the non-pretreated silica has a sulfur content lower than 0.1 % by weight.

13- Use according to one of claims 1 to 12 of a precipitated silica, pretreated by at least one organosilane hydrophobing compound.

14- Use according to claim 13, wherein the organosilane hydrophobing compound has the formula $R_nSiX_{(4-n)}$ in which :
R, identical or different, is an alkyl and/or alkenyl radical,
X, identical or different, is an halogen radical or an alkoxy radical or a silanolate radical,
n is equal to 1, 2 or 3.

15- Use according to claim 14, wherein R, identical or different, is a vinyl radical and/or an alkyl radical, preferably methyl, ethyl or propyl.

16- Use according to one of claims 14 and 15, wherein X, identical or different, is an halogen radical, preferably Cl or a silanolate radical.

17- Use according to one of claims 14 to 16, wherein the pretreated silica has an organic graft number by nm^2 of silica :

- greater than 7 if n=1
- greater than 3 if n=2
- greater than 2 if n=3.

18- Use according to one of claims 13 to 17, wherein the organosilane hydrophobing compound is dimethyldichlorosilane, or a mixture of dimethyldichlorosilane and methylvinyldichlorosilane, or a potassium methylsiliconate.

19- Use according to one of claims 13 to 18, wherein pre-treatment of the precipitated silica comprises the addition of the organosilane hydrophobing compound to an aqueous suspension or slurry of the precipitated silica under neutral or, preferably, basic pH conditions.

20- Use according to one of claims 1 to 12, of a precipitated silica, pretreated by at least one hydrophobing silicone oil, preferably a polysiloxane oil, in particular a polydimethylsiloxane oil or a hydroxy terminated polysiloxane oil.

21- Use according to claim 20, wherein pre-treatment of the precipitated silica comprises the dry impregnation of the precipitated silica, under solid form, preferably at a temperature ranging from 15 to 100 °C, by the hydrophobing silicone oil, the hydrophobing silicone oil being not under aqueous emulsion form.

22- Use according to one of claims 1 to 21, wherein the silicone elastomer is at least one organopolysiloxane.

23- Use according to claim 22, wherein the silicone elastomer is an organopolysiloxane represented by the average composition formula $R^1_pSiO_{(4-p)/2}$ in which R^1, identical or different, represents an unsubstituted or substituted monovalent hydrocarbon group, preferably of 1 to 10 carbon atoms, and p is a number ranging from 1.90 to 2.05.

24- Use according to claim 23, wherein at least 80 mol%, in particular at least 95 mol%, of the R^1 groups are methyl groups.

25- Use according to one of claims 23 and 24, wherein the ratio of incorporation of alkenyl groups within the total amount of R^1 groups is from 0.01 to 20 mol%, preferably from 0.025 to 5 mol%.

26- Use according to one of claims 22 and 25, wherein the silicone elastomer has less than 1 % by weight of organopolysiloxane having a polymerisation degree of 20 or less with terminal hydroxy or alkoxy groups.

27- Use according to one of claims 1 to 26, wherein the said pretreated silica is incorporated in the silicone elastomer by mixing at room temperature, in particular between 15 and 25 °C.

28- Use according to one of claims 1 to 27, wherein the said pretreated silica is incorporated in the silicone elastomer by cold mixing without addition of any process aid / plasticizer.

29- Use according to one of claims 1 to 28, wherein the silicone elastomer / reinforcing filler mixing time is between 0.2 and 5 hours, in particular between 0.2 and 2.5 hours.

30- Use according to one of claims 1 to 26, wherein the said pretreated silica is incorporated in the silicone elastomer by mixing at room temperature, in particular between 15 and 25 °C, without addition of any process aid / plasticizer, the silicone elastomer / reinforcing filler mixing time being between 0.2 and 5 hours, in particular between 0.2 and 2.5 hours.

31- Use according to one of claims 1 to 28, in order to decrease the silicone elastomer / reinforcing filler mixing time.

32- Use according to one of claims 1 to 31, in order to decrease the rise in plasticity over time of the silicone elastomer mixed with the said pretreated silica.

33- Use according to one of claims 1 to 32, wherein the silicone elastomer mixed with the said pretreated silica has an initial plasticity ranging from 200 to 300.

34- Use according to one of claims 1 to 33, wherein the rise of the initial plasticity after 24 hours of the silicone elastomer mixed with the said pretreated silica is lower than 110, preferably lower than 90.

35- A curable silicone elastomer composition comprising at least one silicone elastomer and at least one reinforcing filler, characterized in that the use of the pretreated precipitated silica according to one of claims 1 to 34 is implemented.

36- A composition obtained by curing the composition according to claim 35.

37- A finished article formed by a cured composition according to claim 36.